

LISTING OF CLAIMS:

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)
5. (Cancelled)
6. (Cancelled)
7. (Cancelled)
8. (Cancelled)
9. (Cancelled)
10. (Cancelled)
11. (Cancelled)
12. (Cancelled)

13. (Original) A method of preparing a poly-crystalline silicon film comprising:

depositing an amorphous silicon film on a substrate by a plasma chemical vapor deposition process to be carried out in a reaction chamber, the depositing step being carried out while a heater heats the substrate at a predetermined temperature and the dehydrogenation treatment is carried out with the heater set at the temperature, the temperature being 400°C or more;

setting the pressure of the chamber higher than the pressure of the chamber during the depositing step and leaving the substrate in the chamber to carry out dehydrogenation treatment of the amorphous silicon film; and

poly-crystallizing the amorphous silicon film after the dehydrogenation treatment.

14. (Original) A method of preparing a thin film transistor comprising:

depositing an amorphous silicon film on a substrate by a plasma chemical vapor deposition process to be carried out in a reaction chamber, the depositing step being carried out while a heater heats the substrate at a predetermined temperature and the dehydrogenation treatment is carried out with the heater set at the temperature, the temperature being 400°C or more;

setting the pressure of the chamber higher than the pressure of the chamber during the depositing step and leaving the substrate in the chamber to carry out dehydrogenation treatment of the amorphous silicon film;

poly-crystallizing the amorphous silicon film after the dehydrogenation treatment; and forming a thin film transistor using the poly-crystalline silicon as an active semiconductor layer.

15. (Original) A method according to claim 13, wherein the depositing step is carried out with reactive and carrier gases supplied to the chamber and the dehydrogenation treatment step is carried out with the carrier gas supplied to the chamber.

16. (Original) A method according to claim 13, wherein the dehydrogenation treatment is carried out without a reactive gas.

17. (Original) A method according to claim 13, wherein the poly-crystallizing step is carried out by irradiation with laser beams.

18. (Original) A method according to claim 13, wherein the dehydrogenation treatment reduces the hydrogen content of the amorphous silicon film to less than 10 %.

19. (Original) The method of preparing a poly-crystalline silicon film according to claim 13, wherein a period of leaving time t (seconds) of the substrate in the heating chamber, a thickness d (angstroms) of the amorphous silicon film, and a temperature θ ($^{\circ}\text{C}$) of the chamber at the time when the substrate is left in the chamber satisfy the following equation (1);

$$t > d^2 / (A \times \exp B) \quad (1)$$

where

$$A = 6.0 \times 10^{14},$$

$$B = - 2.56 \times 10^{-19} / (k \times (273 + \theta)), \text{ and}$$

$$k = 1.38 \times 10^{-23}.$$

New Divisional Application of Shinichi KAWAMURA

Entry and consideration of this amendment is requested along with an early action on the merits of this application. By this amendment, claims 1-12 (prosecuted in the parent application) have been cancelled. Claims 13-19 are pending in this application.

Respectfully submitted,

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